

Monro (A)

D E S C R I P T I O N

OF A

HUMAN MALE MONSTER,

ILLUSTRATED BY TABLES,

WITH REMARKS;

FROM THE

T R A N S A C T I O N S

OF THE

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DESCRIPTION of a HUMAN MALE MONSTER, *illustrated*
by *Tables, with Remarks.* By ALEXANDER MONRO, M. D.
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Paris, &c. &c.

[Read Nov. 6. 1792.]

THIS monster, of which the mother was delivered by Mr THOMAS ANDERSON, surgeon in Leith, after the birth of a complete child at the full time, had its proper membranes and a placenta, with a short umbilical cord.

THE following parts were wanting in it; to wit, the bones of the head; the brain, with the organs of sight, hearing, smell and taste; the neck; about one half of the ribs; the larynx, trachea and lungs; the heart; the pharynx, œsophagus and stomach, with all the small intestines, except the end of the ilium; the anus; the liver, spleen, pancreas and omenta; the renal glands; terminations of the ureters; the middle part of the urethra; the right testicle; both arms; both patellæ; with several of the bones of the feet and toes.

A ROUND opening (see fig. 1. and 2.) which led to a thimble-like cavity, shut at its bottom, had some distant resemblance to the mouth.

THE

THE soft parts of the trunk were supported by sixteen vertebræ, six ribs, an os sacrum, and two ossa innominata. The legs had each an os femoris, tibia and fibula, with an imperfect number of the bones of the feet. See fig. 2. X. and fig. 4. I. &c. to 16. 17.

THE umbilical cord was connected at nearly the usual height above the ossa pubis. See fig. 1. E.

THE penis, covered with a large preputium, had the usual situation and structure. See fig. 1. F.

THE lower part of the trunk contained an intestinal tube, shut at its beginning, and composed of an upper part, four inches long, resembling the end of the ilium; for it terminated in the side of an intestine, resembling the caput coli, with its appendix vermiformis. From this place, to its lower end, the great intestine measured thirteen inches; and the end of the rectum, which was much contracted, terminated in the back part of the bladder of urine, above its sphincter. The rectum contained viscid semipellucid mucus, but no black stuff, like the meconium. See fig. 2. O. P. Q. R. S. T. U. V. and fig. 3. O. P.

IN the mesentery and mesocolon, there were about a dozen conglobated lymphatic glands, of the usual shape, colour and consistence. See fig. 2. From which it appeared, that the intestines were provided with lacteal vessels; and we therefore cannot doubt, that the other parts of the body were furnished with lymphatic vessels, or that there was an absorbent, as well as circulating system in this monster.

AT the upper part of the trunk, covered by the ribs, there were two kidneys of a large size, with a pelvis and ureter to each. The right ureter was dilated to the size of a goose's quill. The left one was small. Both were shut at their under ends, and had no communication with a small sac, which, in situation and structure, resembled the bladder of urine, and
had

had an urachus coming from it. See fig. 3. W. W. Y. and fig. 2. W. X. Y.

THERE was only one testis, situated in the usual manner, on the left side. See fig. 2. Z.

THE prostate gland surrounded, as usual, the neck of the bladder. See fig. 4. X.

THE urethra, which was the common passage for the fœces, as well as for the seminal liquors, and that of the sac resembling the vesica urinaria, was wanting from within an inch of the vesica to within an inch of the extremity of the penis. See fig. 4. V. Y. and fig. 3. F. G.

THE spinal marrow was of a conical shape, with the top or small part of the cone at its upper end, and at its lower end it formed a cauda equina. From its two ends and sides, it sent off eighteen pairs of nerves; which, at their origin and in their progress, were nearly as large as they are in a perfect fœtus, or where the brain and cerebellum are connected with the spinal marrow. See fig. 4. 1. *Sc.* to 16. *n. n.*

THE umbilical cord was nearly proportioned to the bulk of the monster; and, at the umbilicus, consisted of one vein and two arteries, within which I found red blood. The vein was more capacious than both arteries conjoined; and, as soon as it entered the abdomen, was divided into various branches, which were dispersed upon all parts of the body. See fig. 3. *a, b, c, d, e, f, g*; fig. 2. *b, i*; fig. 4. *b, i*.

VESSELS, every where, accompanied the branches of the umbilical vein, corresponding with them in size, as well as situation; and, joining together, formed trunks, from which, at the sides of the pelvis, two vessels were continued, one of them on each side of the vesica urinaria and urachus, to the umbilicus, which they perforated, and then went, along the umbilical cord, towards the placenta, resembling the umbilical arteries. See fig. 3. *b, i, k, l, m*; fig. 4. *k, l*; fig. 2. *b, i*.

UNLUCKILY, before I received the monster from Mr ANDERSON, he had entrusted the injection of its placenta to some person, who had managed it so negligently, that nothing, he told me, could be determined as to the distribution or communication of the vessels of the placenta with each other, or with those of the placenta of the complete child, or with those of the mother.

EXPLANATION of the FIGURES, representing the parts of a human Male Monster, of its real size.

FIG. I. represents the fore view of it entire.

- A. B. C. A circular mass, more than two inches thick, which supplies the place of head, trunk and arms.
- D. A thimble-like cavity, somewhat resembling the mouth.
- E. The umbilical cord.
- F. G. The penis and preputium.
- H. I. K. L. M. N. The thighs, legs and feet.

- FIG. II. In this figure, at the letters A. B. C. D. F. G. H. I. K. L. M. N. the same parts are represented as in fig. I. The cavity of the abdomen being laid open by a longitudinal incision, we perceive,
- O. P. The small intestine.
 - Q. The caput coli, and appendix vermiformis.
 - R. S. T. U. V. The great intestine.
 - W. X. The right and left ureters.
 - Y. The vesica urinaria and urachus.

Z. The

Z. The left testicle, with its spermatic cord, cremaster muscle and vas deferens.

b, i. Two large vessels, at the sides of the pelvis, furnished by the umbilical vein.

E. E. The two umbilical arteries.

FIG. II.* In this figure, the conglobated, lymphatic or lacteal glands of the mesentery are represented.

FIG. III. In this figure, the distribution of the blood-vessels, chiefly, is represented. At the letters A. B. C. F. G. H. I. K. L. M. N. the same parts are represented as in fig. 1. and fig. 2.

O. P. shew the intestines pushed behind the blood-vessels to the left side.

W. W. The kidneys and ureters.

X. The ribs which covered the kidney, drawn towards the right side.

Y. The bladder of urine.

a, b, c, d, e, f, g, The umbilical vein, divided into branches for the several parts of the body.

b, i, k, l, Vessels accompanying the several branches of the umbilical vein.

m, Two vessels resembling the umbilical arteries.

n, n, The sciatic nerves.

FIG. IV. In this figure, the spinal marrow, and nerves connected with it, are chiefly represented.

A. B. C. H. I. K. L. M. N. represent the same parts as the former figures.

V. represents a probe passed from the rectum through the neck of the bladder into the urethra.

Y. A bristle passed from the bladder into the urethra.

S. The spinal marrow.

E. The cauda equina.

I. 2. &c. to 16. Nerves sent off from the spinal marrow in pairs.

17. The os sacrum.

n, n, The sciatic nerves.

REMARKS on such MONSTERS.

MONSTERS wanting the head, heart and lungs, and, in almost every other respect, agreeing with that above described, have been mentioned by authors, particularly by MERY and WINSLOW *, and the learned Dr ROEDERER † has given a full description of a monster, in which one small muscular sac only was found, instead of a complete heart, communicating with the continuation of one of two veins which were found in the umbilical cord ; but the real course of the blood, or the causes of its motion, appear to have been misapprehended by all these authors.

MERY thinks the blood of the foetus must have been moved by the motion of the heart of the mother, and considers the want of the heart in such monsters, as a strong confirmation of the opinion he entertained, that there is a circulation of the blood carried on between the mother and the foetus ‡.

As

* Mem. de l'Acad. 1720 and 1740.

† Act. Got. t. iv. 1754.

‡ MERY, Mem. de l'Acad. des Scien. 1720. 1^{re} Reflexion. " Sa vie n'a pu avoir pour principes que la respiration et le mouvement circulaire du sang de sa mere." And in the Histoire, " Le defect du cœur prouve que le sang qui a circulé dans ce foetus ne recevoit pas son impulsion que du cœur de mere." M. MERY a toujours soutenu la circulation reciproque entre la mere et le foetus, et telle que le foetus est toujours comme un membre de la mere.

As WINSLOW had not found any red blood in the vessels of the foetus, nor traced within it the branches of the umbilical vein, but those only, as he supposed, of the vessel he called aorta, and which he thought performed the office of an artery, he is led to the supposition, that, instead of a circulation, there was only a sort of progression of the colourless blood, or lymphatic humour, to the capillary extremities of the arterial ramifications, and that it transfused, by little and little, and very slowly, into the cellular texture of all the parts, and perhaps, at last, passed through the pores of the skin, in the form of moisture*.

Dr ROEDERER † not only applies the term of vena cava to the large vein with which the umbilical vein is joined to the heart, but describes the cava as ascending from the abdomen to the thorax ‡. In like manner, he not only applies the name
aorta

* WINSLOW, Mem. de l'Acad. des Scien. 1740.

P. 588. "La veine ombilicale, s'étant écartée du cordon de son entrée dans le ventre, y formoit un tronc fort court, qui montoit tout droit et s'implantoit à la base du bouton cutané, s'adossant là avec le tronc d'un autre vaisseau de pareille grosseur, qui sortoit de la même base, et qui étant d'abord courbé vers en bas, descendoit derrière les paquets des intestins, à peu près comme le tronc de la portion inférieure de l'aorte, et se distribuoit ensuite en plusieurs branches, de la manière que je dirai ci après."

P. 590. "On ne voyoit pas une goutte, ni aucune apparence de sang rouge dans toute l'étendue du corps de cet enfant ; ni aucun vestige de vaisseaux veineux."

P. 600. "Hors la petite portion de la veine ombilicale après son entrée par le nombril, je n'ai trouvé, dans tout le corps de cette enfant, aucun vaisseaux veineux, ni le moindre vestige soit de tronc, soit des ramifications de veines."

P. 604. "Mais à l'égard de la circulation intrinsèque dans les parties mêmes de ce demi-corps, l'absence ou la privation totale des vaisseaux veineux m'a fait conjecturer, qu'au lieu de circulation proprement dite, il n'y a eu qu'une espèce de progression ou trusion jusqu'aux extrémités capillaires de toutes les ramifications arterielles, et que là ce sang lymphatique transfusoit, peu à peu, et très lentement dans le tissu cellulaire de toutes les parties. — Et, peut-être, passoit par les pores externes de la peau, en manière de moiteur. Je n'avance tout ceci que comme des pures conjectures," &c. &c.

† Com. Soc. R. Sc. Gotting. tom. iv. com. 4.

‡ P. 109. "Duplicem autem umbilicalis funis venam largitur ; altera minor, cum vena cava, ex abdomine ascendente confluit."

aorta to the vessel which accompanies the continuation of the umbilical veins ; but speaks of his aorta as ascending from the thorax to the head *, and sending off the subclavian and the carotid arteries ; and remarks, that canals proper to the latter were wanting †. And he observes, that the aorta, after descending, as usual, between the crura of the diaphragm, gave off the mesenteric, renal, lumbar and iliac arteries ; and that the left iliac artery sent off an umbilical artery ; and concludes his description in the following words : “ Ita, quidem, si arteriæ umbilicalis dextræ, arteriæque celiacæ defectus——exci-
“ piatur, vix ab usitata fabrica aberrans arteria aorta in abdomine distribuitur.”

AFTER an elaborate description of the several parts of the monster, Dr ROEDERER proposes the cause of the motion of its humours, in the following words :

P. 189. “ MOTUS qui—humores agitat, causa indagatur.
“ Ast aliquis, lentus licet, fœtus parasitici humores motus
“ agitavit. A corde, fueto motore, repeti iste motus nequit, ne-
“ que multum auxilii propulsus in uterum maternum sanguis
“ ferre potest. Præter vero istum, levem, debilemque.—
“ Ipsa vasorum actio, five contrahendo agat, five attrahendo,
“ vi

* P. 121. “ Arteria magna, quam aortam vocant, ex abdomine in thoracem ascendit. In thorace eandem pene directionem servans, nulloque cum corde canali confluens, sola et a corde distincta, iter suum absolvit. Nullus proinde ex aorta arcus formari potest, sed laterales rami ex recto aortæ trunco emittuntur. Sunt isti rami qui descripti sequuntur.

In regione costæ primæ levissime descendentes arteriæ subclaviæ nascuntur ; ex quibus vicissim triplex alia ramorum species oritur, quarum primus ad cervicem, &c. Porro truncus aortæ per semipollicem postquam progressus est in duos ramos dividitur, duas nempe arterias carotides, quæ ad altitudinem laryngis sine insigniori ramo ascendunt. —Ascendit, autem, carotis dextra, &c.—Ad latus tandem laryngis canalis communis in sex omnino ramos dividitur.”

† P. 143. “ Canalis pro arteria carotide deest. Carotis per amplum foramen lacertum ad cerebrum tendit.”

“ vi illa capillaribus tubis familiari, præcipuum humoribus
 “ motum impertiri debet.—Accedant forsan et aliæ in fœtu
 “ nostro causæ incognitæ, ipsa fortasse a colore excitata fluido-
 “ rum agitatio, aliaque.”

BUT as to the direction in which he supposed the humour to be moved, he says nothing, and therefore leaves us to judge of his opinion, from the foregoing description of the blood-vessels.

TO the opinions of all these authors, when fully considered, we shall find insuperable objections.

THUS, without saying in objection to that of MERY, that it is so far from being certain, that there is a circulation of red blood between the mother and fœtus, that the contrary opinion is the most probable, we cannot conceive, although the anastomoses of the uterine with the placental vessels were proved, that the mere impulse of the blood in the minute arteries should have carried the blood, not only into the trunks, but through all the capillary branches of the vessels of the fœtus, and again back from these to the placenta, and from its umbilical arteries into the umbilical veins and veins of the uterus.

THE opinion of WINSLOW is far more unsatisfactory than that of MERY. In the first place, it cannot be applied to the monster described by MERY, or to that before us, where there were two sets of vessels. In the next place, WINSLOW was so far from tracing distinctly the joining of the umbilical vein with the vessel he calls aorta, that he describes it as merely *s'adossant* with the trunk of the aorta*.

3. ALTHOUGH he repeatedly affirms, that there were no venous vessels in any part of the body of the monster, yet his description of the vessels of the kidney will not, when considered, be found to correspond with his general assertion; for he describes a vessel which indeed he calls arterious, but which
 began

* See p. 588. of Mem. de l'Acad. or Note, p. 221.

began on the fore-part of the belly above the navel, at the place where the small portion of the umbilical vein terminated in the cavity of the cutaneous button, from which various branches were sent into the kidney at its convex part, and from its concave part, different arteries, he says, came out in an extraordinary manner *.

UPON the whole, as the umbilical cord is not said to have been uncommon in size or structure; as there were two sorts of vessels connected with the kidney; as it is so improbable, as to be incredible, that the fœtus received arteries without corresponding veins, or that there was merely a protrusion of the humours, and exudation of them, without circulation, I have no doubt that WINSLOW, especially as he did not inject the vessels of the umbilical cord, had mistaken the continuation of the umbilical veins, and the branches of the vessels he calls aorta, for branches of the same vessel; and as the monster he examined agreed very nearly, in all other respects, with that I have described, I apprehend it must have agreed likewise in having two kinds of blood-vessels or arterious and venous canals.

THE learned Dr ROEDERER rejects the opinion of MERY, that the blood of the fœtus is circulated by the heart of the mother, and supposes, that capillary attraction, heat, and some activity of the vessels, may contribute to its motion. But as he applies the term aorta, not to the continuation of the umbilical vein, but to the other principal vessel of the monster, and describes

* P. 602. "Ce tronc arteriel qui étoit comme la portion inferieure de l'aorte descendante, au lieu de tenir la route naturelle en arriere le long des vertebres, il en étoit ici très éloigné. Il commençoit sur le devant du ventre au dessus du nombril, à l'endroit où se terminoit la petite portion de la veine ombilicale.—Il jettoit des branches dans la masse du rein par . . . sa convexité. Il sortoit de la concavité plusieurs artères.

describes it as sending branches downwards from the abdomen to the inferior extremities, and upwards from the thorax to the head, and applies the name of carotid arteries to two of these branches, with the additional remark, that the canales carotici were wanting, it will, I apprehend, appear evident from these circumstances, and from what I am about to observe in the next section, that he misunderstood the direction in which the blood was moved and circulated.

Of the Direction of the Blood in this Monster.

As there are two kinds of vessels in the umbilical cord, and likewise within the body of this monster, which we shall call, in the common style, arterious and venous, we cannot doubt, that these communicated with each other, and that the blood was conveyed by them in a circle.

To describe the circle more exactly, we cannot doubt, that the blood was conveyed from the placenta by the umbilical vein into the body of the monster. We next found, that the umbilical vein within the monster was divided into various branches, which could be traced to all its parts, or that these branches performed the office of arteries, or resembled the vena porta hepatica. Contiguous to these branches, we found, every where, other vessels which formed a trunk or large vessel, which, by its situation, resembled our aorta. But we must suppose, that these branches served the purpose of receiving the blood from the extremities of the branches of the umbilical vein, or were in reality venous vessels. From the vessel resembling the aorta in situation, but very different in office, two vessels were sent off, which ran at the sides of the bladder to the umbilicus, and formed the arteries of the umbilical cord and of the placenta, and, in the placenta, must have terminated

in the minute beginnings of the umbilical vein, to complete the circle in which the foetal blood was moved.

THUS, we observe the umbilical vein in the placenta and umbilical cord performing the office of a vein, but its continuation within the body of the monster, performing the office of an artery. On the other hand, we find the vessel we have called aorta, performing the office of a vein within the monster, and that of an artery in the umbilical cord and placenta.

Of the Causes of the Motion of the Blood in this Monster.

IN the monster examined by WINSLOW, which I have endeavoured to shew agreed very nearly with that I have described, no red blood was found in any of the vessels; and therefore we must conclude, that none of the red arteries of the mother anastomosed with the umbilical veins; and even where there is the ordinary structure, it is so far from being certain, that the vessels of the uterus, which convey red blood, anastomose with those of the umbilical cord, that the contrary is the most probable opinion.

IT is therefore very improbable, that the blood in the umbilical vein was pushed on by the heart of the mother.

FURTHER, though we were to admit, that the arteries of the mother anastomosed with the umbilical veins, yet as their communications must be supposed very minute, and the momentum of the blood in them very much broken, we cannot conceive, that it could have been sufficient to push the blood through the terminations of all the branches of the umbilical veins, in the several organs of its body, into the vessel we call aorta, and again from the aorta back to the placenta by the umbilical arteries, and through the minute branches of these to the veins of the mother, and beginnings of the umbilical veins.

WE

WE therefore must conclude, that the circulation of the blood in the placenta and body of the monster, was carried on by a well regulated muscular action of the blood-vessels. In one of the worms, the *echinus esculentus*, I found in the mesentery, which is a principal part of it, two such large vessels without a heart, and which, we can scarcely doubt, resembled our aorta and cava, and circulated its fluid; and in fishes*, the blood which passes through the liver describes three circles, and in all other parts of the fish the blood describes two circles before it returns to the heart; which motion of it we must suppose to be chiefly owing to the muscular action of the vessels, as the force of the heart appears to be as much spent in the gills of the fish as in the lungs of a man.

FROM considering the manner and cause of the motion of the blood in this monster, and comparing with it the motion of the blood in fishes and in the sea-egg, we are, by analogy, led to the following general conclusions:

1. THE arteries contribute much to the circulation of the blood in our bodies.

2. IT is probable that, in man, the veins likewise assist in circulation; and, in particular, there can be no doubt, that the *vena portarum*, by its action, contributes much to the motion of the blood through our liver.

3. FOR the like reasons, we may conclude, that arterious vessels, independent of the impulse of the heart, may act in such a manner, as to perform the secretion of liquors, to nourish the solids, and to add to their bulk; and particularly, that the branches of the *vena portarum* change certain parts of the blood into bile.

* See MONRO on Fishes, p. 67. Tab. xliii.

Remarks on the Nervous System of this Monster.

1. As the spinal marrow, and pairs of nerves sent off from it, had nearly the usual size and structure, although the brain, cerebellum, and medulla oblongata, were entirely wanting, we find reason for calling in question the common doctrine of authors, which teaches, that the spinal marrow and nerves derive their origin from the brain and cerebellum, and are dependent upon it as much as the ducts of glands are upon the glands which send liquors into them.

2. FURTHER, as the several parts of this monster were furnished with nerves, and as we have found, that its arteries and veins, by a well-regulated, varied and complicated action, circulated the blood, we must suppose, that their muscular fibres were actuated by those nerves. We therefore find in this monster, not only the existence and common appearance of the spinal marrow and nerves connected with it, although the brain and cerebellum were wanting, but we have proof that these, independent of the brain and cerebellum, may actuate the muscular fibres in the vessels of an animal, or that nervous energy, or fluid, as it is commonly called, is not derived from the brain and cerebellum solely ; that is, we conclude, that the nerves, as well as the brain and cerebellum, are capable of furnishing nervous energy ; and that there is no more reason for believing, that the nerves are derived from the brain, than that the brain is derived from the nerves : or all the parts and branches of the nervous system appear to possess the general power or office of furnishing nervous energy.

Of

Of the Duration of the Life of this Monster.

As in man and similar animals, the direct or indirect influence of respiration seems necessary for the continuance of life, and as the lungs were wanting in this monster, we must suppose, that it could have outlived the separation from the mother for a very short time only. But when we add to this, that, by the ligature of the umbilical cord, a stop would be mechanically put to the circulation of its blood, it is evident, that its life must have terminated with its delivery.

Of the Time at which this Monster must have acquired the Structure which has been described.

As this monster was provided with a distinct placenta and membranes, and its body surrounded with and protected by the liquor amnii ; as no vestige appeared of the brain, cerebellum, organs of the senses, or other parts of the head ; as nervous threads, proper to this monster, ascended from the upper end of the spinal marrow towards the upper parts of its body ; as its system of circulating vessels was complete without a heart, and the manner of their branching different in many respects from the common structure : it must surely appear, to an unprejudiced person, absurd to suppose, with many eminent authors, that such monsters, when first produced, had the ordinary structure, and that this was afterwards altered by pressure and other accidents.

THE like observation may be extended to many other monsters in my possession, I believe I might say to almost all other
monsters

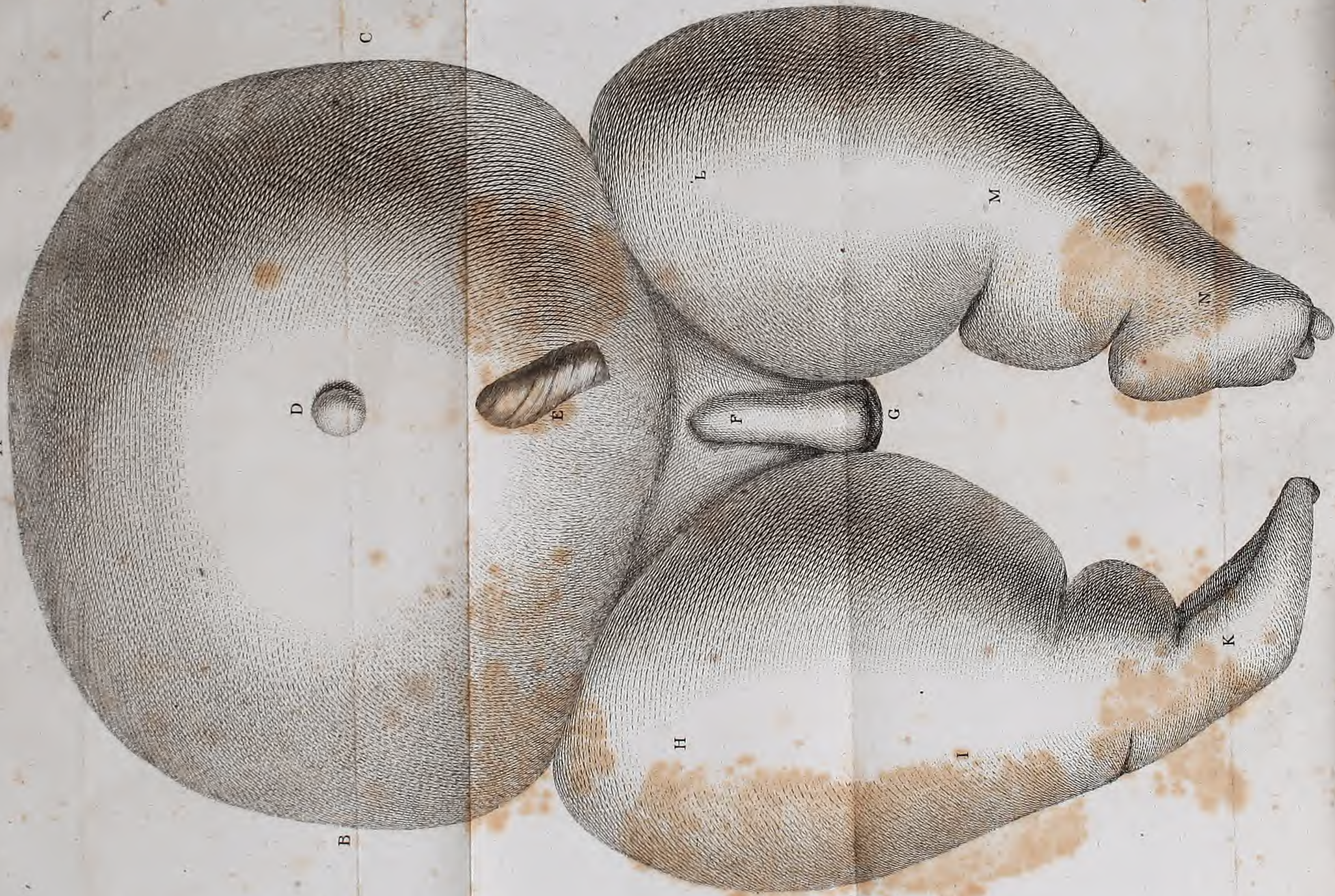
monsters which have been described ; particularly to two, of which I published a description, illustrated with figures, in my work on the Nervous System. In one of them, a human monster, one heart supplied two heads and two trunks. In the other, a kitten, one heart, consisting of two auricles and two ventricles, sent off from its left ventricle one aorta, which supplied one head and two bodies *.

* See Observations on the Nervous System, Tab. viii. ** and Tab. xñ.

F I N I S.

Figl.

A



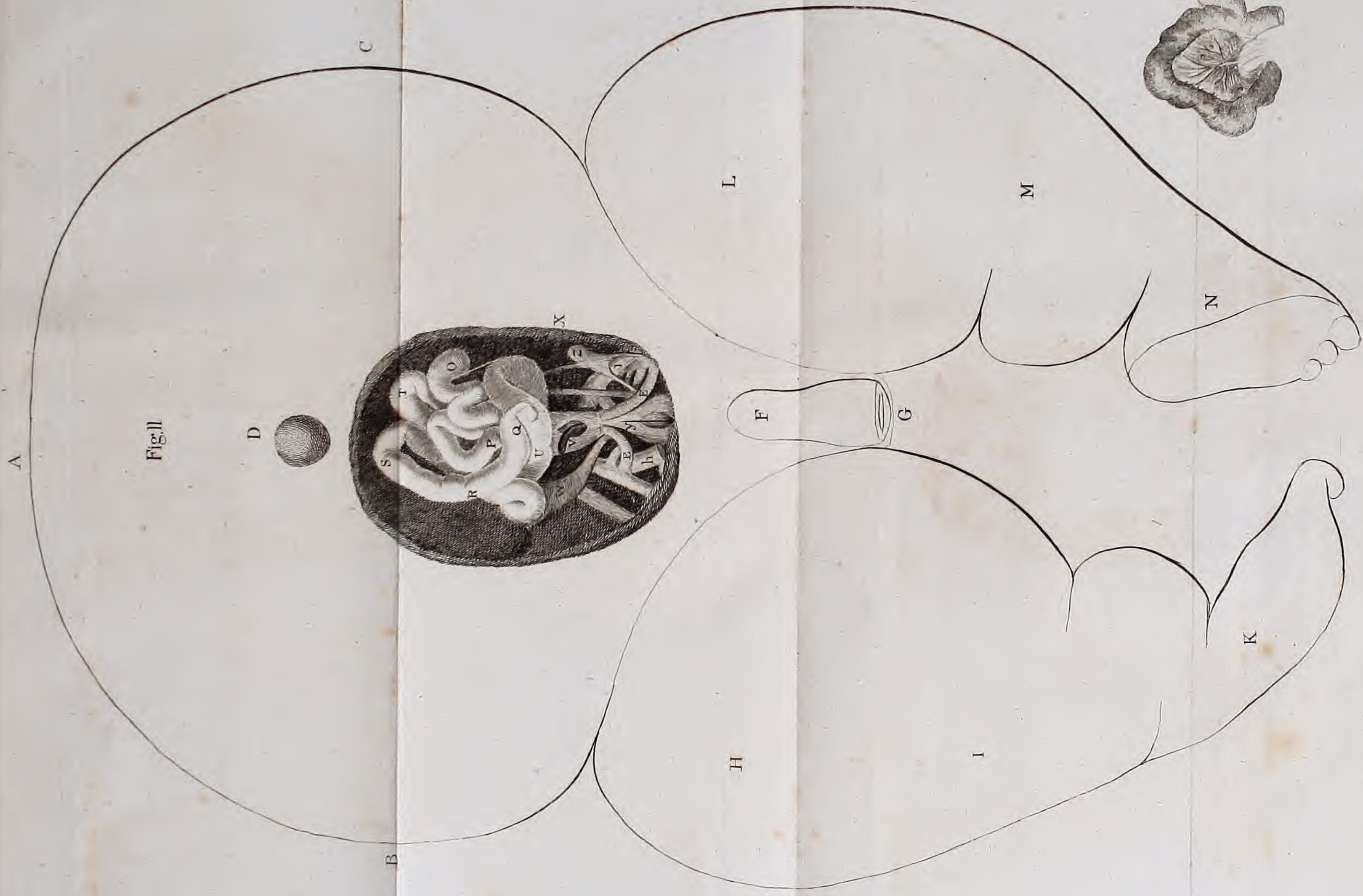


Fig. II



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Fig. IV.

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